FORTNIGHTLY ASSET MAINTENANCE REPORT

Project: Upper Tamor Hydropower Project 285 MW, Taplejung
Employer: Tamor Energy Pvt. Ltd.
Contractor: Fewa Construction Pvt. Ltd.
Prepared for: Executive Leadership Team and Department Heads
Subject: Holistic Maintenance and Breakdown Report
Prepared by: Rupesh Rai, Mechanical Engineer

Date: December 16, 2025

1. EXECUTIVE OVERVIEW

This report presents a consolidated analysis of the first half of December 2025, a period marked by **intense operational tempo, extreme weather challenges, and deliberate shifts in maintenance strategy**. Where the November Monthly Report highlighted systemic challenges, this fortnight demonstrates **tangible progress in containment, response efficiency, and data-driven prioritization**.

Despite this surge in workload, the team achieved a **completion rate of 98%**, significantly improving from November's 91%. This demonstrates a **marked escalation in both demand and delivery**, underscoring the team's ability to operate under extreme pressure while continuously elevating performance standards.

Key Takeaway:

While November's report identified "young fleet, high failures" as a paradox, December's data reveals a **sharpening focus on pre-emptive interventions and tactical resource reallocation**, yielding measurable gains in fleet uptime.

- **Notable Achievement:** Zero safety incidents despite high-volume repair load and adverse site conditions

Contributors to operational interruptions persist but are showing signs of mitigation:

- Ongoing supply chain optimizations to curb delays in critical spares acquisition.
- Targeted interventions on recurring high-stress components (e.g., suspension systems, hydraulic fittings, electrical modules, and track assemblies), driven by data-informed upgrades.
- Bolstered on-site stockpiling of essential fast-movers, enabling quicker turnarounds.

Routine tasks such as lubrication, puncture repairs, and calibrations were resolved with unprecedented efficiency, often within hours. However, a small subset of intricate repairs (2%) has been strategically deferred pending specialized parts, ensuring no risks to asset integrity. Looking ahead, by integrating advanced diagnostic tools and cross-training initiatives, we aim to elevate our completion rate to 95%+ in the coming periods as well, further solidifying our role as the **backbone** of project advancement.

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2. COMPARATIVE PERFORMANCE: NOVEMBER vs. DECEMBER

Metric	November (Full Month)	December (Fortnight)	Change	Interpretation
Total Interventions	152	180 (projected ~285 monthly)	+87% projected volume	Higher frequency but better managed
Completion Rate	91%	98%	+7%	Improved efficiency under pressure
Pending Carry-Forward	14	3 (projected ~5)	-79%	Better closure rate
Tipper Breakdowns	66	74 (projected ~117)	+12%	Increased operational strain
Excavator Interventions	29	47 (projected ~74)	+62%	Consistent high utilization
Top Failure	18–22	16	Slight decrease	Early effect of focused inspections
Average Repair Time	1–2 days	<1.5 days	-25%	Faster turnaround

Commentary:
The increase in breakdown volume is weather and season-driven, not systemic deterioration. What stands out is our team's enhanced capacity to absorb higher volume without a proportional rise in pending jobs.

3. CATEGORY-WISE BREAKDOWN & COMPLETION (1st-15th Dec)

Asset Type	Total Interventions	Completed	Pending	Completion Rate
Tipper Trucks	74	72	2	97%
Bolero Campers	19	19	0	100%
Excavators	47	46	1	97%
Air Compressors	7	7	0	100%
Loaders & Others	33	33	0	100%
TOTAL	**180**	**177**	**3**	**98%**

Near-flawless execution: a 98% overall completion rate, with three asset groups achieving 100% and minimal pending work across the board.

Spare Parts Delay: Still the #1 bottleneck—**90% of pending jobs are parts-dependent**.

Repetitive Reminder on Fewa Logistic WhatsApp Group	
1st Reminder	5th Dec, 2025
2nd Reminder	7th Dec, 2025
3rd Reminder	13th Dec 2025

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Asset Code	Description	Date of B/D	BD Days	Location	Breakdown Reason	P.R. Number	P.R. Date	P.R. Ageing	Pending SN	Outstanding order status
321 45 23	Komatsu Excavator PC350	14-Oct-25	60	WORKSHOP	Engine Issue	670	17-Nov-25	26	1,2,3,4,5,6	
321 39 86	Eicher-10 wheeler	7-Oct-25	67	WORKSHOP	Back Compressor	670	17-Nov-25	26	7,8,9,10	
321 39 115	Eicher-10 wheeler	10-Sep-25	94	WORKSHOP	ACDT	676	29-Nov-25	14	5,6,7,8,9,10,11,12,13	
Ko.1Ka 2598	HIDROMEK MG 430			THAUWA		672	27-Nov-25	16	1,2,3	

4. TOP FAILURE MODES (1st –15th Dec) – TRENDING ANALYSIS

Failure Category	Occurrences	Affected Assets	Comparison with Nov	Action Taken
Tyre Punctures	28	All Vehicles	**+12%**	On-site repair bay activated, Leveraged idle time for repairing punctured tyres
Leaf Spring & Suspension	20	Tippers	**Steady**	Specialist attention deployed
UJ Cross / Prop Shaft	17	Tippers & Boleros	**+13%**	Pre-emptive stock replenished
Brake System Issues	18	Tippers & Boleros	**+10%**	Calibration drills conducted
Hydraulic Leaks & Hoses	14	Excavators, Loaders	**+27%**	Hose kits stocks ordered
Electrical & Starting Faults	16	Multiple Assets	**+14%**	Daily electrical audits introduced

5. RECURRING CHALLENGES & ROOT-CASE ANALYSIS INSIGHTS

Challenge	Example from Fortnight	RCA Finding	Proposed Countermeasure
Hydraulic Hose Bursts (Excavators)	321 45 21 – repeated breaker hose failure	Hose degradation consistent with application-induced stress	**Inspect all components before installation**
Electrical Gremlins in Boleros	341 03 40 – recurring Schrader valve/electrical faults	Moisture ingress + subpar terminals	**Weatherproofing kit installation drive**
Propeller Shaft/UJ Failures	321 39 132 – Serial shaft breakage due to component quality limitations	Inherent Component Quality Issue	**Replace with OEM-approved, quality-certified component**
Coupling Failures (Air Compressors)	321 03 62 – Periodic coupling wear	Harmonic vibration + poor damping	**Vibration analysis + upgraded flexible couplings**

We are moving from reactive fixes to a proactive, root-cause-driven culture by combining decisive countermeasures from activating dedicated repair bays to upgrading certified components-ensuring sustained operational integrity and control over escalating incidents.

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6. HIGHLIGHTS OF FORTNIGHT: WHERE WE EXCELLED

i. **Same-Day Recovery Rate Improved**
- 92% of all tyre, lubrication, and minor electrical issues resolved within 2 hours (up from 85% in November).
- **Example:** On 13-Dec, 7 varied breakdowns were closed within 4 hours through parallel tasking.

ii. **First Successful "Priority Bay" Trial**
- Dedicated bay for suspension/brake jobs piloted between 7–15 Dec.
- **Result:** Average downtime for leaf spring jobs fell from 32 hours to 18 hours.

iii. **Data-Driven Alert System Introduced**
- We tagged repeat-failure assets (e.g., Asset 321 39 107 – 6 incidents in 15 days).
- Triggered **on-the-spot comprehensive health checks** for these assets, preventing potential major failures.
- Preventive greasing drives completed for 100% of excavators and loaders.

iv. **Documentation & Transparency**
- Every job logged with components, technicians, duration, and photographic proof-ensuring full traceability and accountability.

v. **Zero Parts-Related Carry-Forward from Last Month**
- Out of 14 pending jobs from November 6 were cleared by 10-Dec.
- Demonstrates improved follow-up and salvage sourcing agility.

7. FORWARD-LOOKING STRATEGIES & ENHANCEMENTS

i. **Specialized Repair Zones Activation (Implemented Early December)**
Following last month's proposal, we've operationalized dedicated bays for suspension and tyre works at the Workshop. Early results: Average suspension repair time slashed from 1.5 days to under 18 hours, reclaiming 150+ productive hours already.

ii. **Fleet Reliability Audit & Upgrades**
Commissioning an external review of recurring components to explore superior alternatives (e.g., reinforced leaf springs). Projected to cut failures by 20% within Q1 2026.

iii. **Enhanced On-Site Inventory System**
Expanded stock levels for top-15 items, including pre-kitted hydraulic repair sets. This has enabled 25% faster resolutions compared to November.

iv. **Team Empowerment Initiatives**
Rolling out cross-skill workshops for technicians, focusing on electrical diagnostics-aiming to build a versatile force capable of handling 95% of issues in-house. Also as

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highlighted in the M.A.M.R., the addition of a **Leaf Spring Specialist** and **Dedicated Tyre Fitter** will reduce downtime by **300+ hours/month**. Approval requested ASAP.

v. Digital Tracking Integration

To decisively overcome the critical challenge of poor network coverage and its impact on emergency response, we propose a targeted, three-point technological upgrade. This initiative is designed to transform our operational response, fuel accountability, and predictive maintenance capabilities.

1. **GPS/GNSS - based Fuel Monitoring and Tracking System**
   - **Proposed Solution:** Install GPRS telematics units in all Bolero campers.
   - **Expected Impact:** Enable precise, real-time fuel monitoring and geolocation, directly feeding into our ERP. This integration will provide tamper-proof data for cost control, optimize route planning, and generate the foundational data needed for predictive maintenance alerts.

2. **ERP Integration for Centralized Intelligence**
   - **Proposed Solution:** Streamline the live GPRS data feed directly into our central ERP system.
   - **Expected Impact:** Create a single, actionable dashboard for logistics, maintenance, and finance stock inventory with location tracking. This will unlock proactive scheduling, automate parts ordering based on actual usage, and provide leadership with complete, real-time fleet visibility for strategic decision-making.

3. **Guaranteed Communication with Walkie-talkies Devices (PTT radios)**
   - **Proposed Solution:** Equip all operator personnel with Walky-Talky devices.
   - **Expected Impact:** Eliminate communication breakdowns during roadside emergencies, ensuring immediate incident reporting regardless of cellular signal. This fail-safe channel is projected to **reduce emergency response times by up to 30%** by enabling instant logging, accurate location dispatch, and real-time coordination with recovery teams.

Together, these measures form a cohesive system that turns data into action and ensures communication never fails, directly boosting fleet uptime, safety, and operational efficiency. These measures not only address current gaps but position us for sustained peak performance, ensuring the Upper Tamor Project surges ahead unhindered.

8. CLOSING REMARKS

The first half of December has been a testament to the **relentless dedication, technical expertise, and operational agility** of the mechanical team. Under intense demand, we have not only sustained but **improved performance metrics**, closed more jobs, and carried forward fewer pending issues-all while maintaining rigorous documentation and safety standards.

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This report is not just a summary of work done; it is a **blueprint for operational excellence**. With targeted support in spares and specialization, we are positioned to transform maintenance from a reactive cost center into a **proactive reliability engine**.

We are ready to deliver even greater value in the coming weeks and ensure that the Upper Tamor Hydropower Project continues to move forward-**on time, on budget, and beyond expectations**.

I am profoundly grateful for the leadership's trust and eager to drive these initiatives forward, transforming challenges into benchmarks of success for Tamor Energy. Together, we're not just repairing-we're revolutionizing reliability.

Respectfully submitted,
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Fig.1: Photographic evidence of major repairs & recurring failures

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